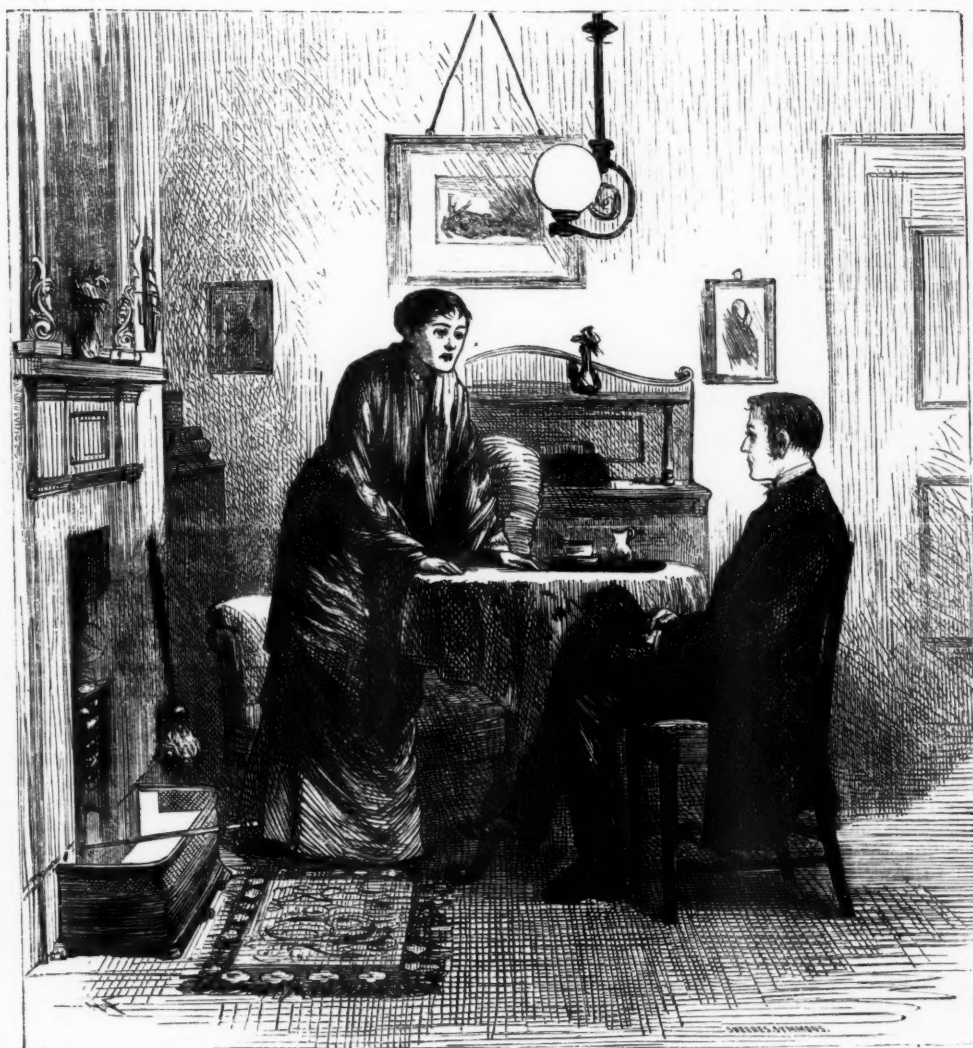


THE LEISURE HOUR.

BEHOLD IN THESE WHAT LEISURE HOURS DEMAND,
AMUSEMENT AND TRUE KNOWLEDGE HAND IN HAND.—*Couper.*



CLARINA RECOGNISED.

IDONEA.

BY ANNE BEALE, AUTHOR OF "THE PENNANT FAMILY," ETC.

CHAPTER XXXVII.

Bind the sea to slumber stilly,
Bind its odour to the lily,
Bind the aspen ne'er to quiver,
Then bind love to last for ever.

—*Thomas Campbell*

WHEN Mrs. Dooner had greeted Neville with her customary ceremonious curtsy and extra-fine

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good breeding, she went into ecstasies over "The Graces."

"Such china as this hidden away in a cupboard! Why, Mr. Fairborn, you cannot be aware of its value. If you were inclined to sell it, I should consider it an honour to be the purchaser."

"You are very good, but it is not really mine; I merely hold it in trust," replied Neville.

"I should be sorry to trust you with one of my pieces if you treated it so cavalierly. Lina has told

PRICE ONE PENNY.

me where she found it. Would the owners be disposed to part with it?"

"I think not. I am afraid Miss Lina must kindly replace it in its cupboard, until the friend to whom it belongs claims it."

Neville's eyes were fixed on the china while he said this, and Idonea's on her drawing; still each felt that a silent conversation passed between them.

"I could weep at the idea of hiding it away," said Mrs. Dooner, almost forcing the sympathetic moisture to her eyes. "But if your friend should wish to sell, will you think of me, Mr. Fairborn?"

"I will," replied Neville; then added, hastily, "By the way, Mrs. Dooner, I think you are acquainted with General Gore?"

"My daughter Charlotte is," replied that lady, still contemplating the china. "May I inquire what is the subject of that heavenly group?"

"I believe it represents the Graces," returned Neville, glancing, in spite of his better intentions, at Idonea.

"I thought so—I was sure of it; they are so like! This is Mrs. Muser, this Emma, and this Charlotte. You are aware, Mr. Fairborn, that my three eldest daughters have always been called the Graces?"

A shout of laughter from Lina interrupted Neville's, "Oh, really; I was not aware."

"Lina, I assure you I have been constantly called the Mother of the Graces," continued Mrs. Dooner, with dignity.

"Are you sure it was not of the Gracchi, mamma?" retorted Lina.

"I am sure, Lina, it was the Graces. Lord Sugarman always inquired for my Three Graces. You were asking about General Gore, Mr. Fairborn, the great traveller."

"I was merely curious to know how he is connected with Sir Richard Dyke," said Neville.

"The general and Sir Richard's father were brothers."

"Still I do not understand how Sir Richard came by the name of Dyke."

"Dear me, Mr. Fairborn, I thought every one knew that he became Sir Richard Gore on the death of his uncle, and assumed the name of Dyke almost immediately after, on the demise of his mother's cousin, who left him a fine fortune on condition that he should take the name of Dyke."

While this was uttered with a stopless volubility, unusual to Mrs. Dooner, Idonea's pencil dropped, and she glanced involuntarily at Neville. Sir Richard Dyke had, then, been once Mr. Gore, and they both knew that Madame Ronda was making inquiries concerning him on behalf of a Mrs. Gore.

"I have lived such a hermit life till the last two years," said Neville, when Mrs. Dooner ceased, "that a baronet's change of name might well escape me."

"A very old baronetcy. There was much trouble and expense to have the name changed," broke in Mrs. Dooner. "My daughter and Sir Richard were attached when he was plain Mr. Gore; he did not think himself rich enough to aspire to her hand."

"Was he abroad when his father died?" asked Neville, remembering that Madame Ronda and her children were reputed foreign.

"I believe so. He was summoned home on his father's death. He then came to see my daughter. After he changed his name there was a misunder-

standing; he went wandering all over the world. Then he returned and my daughter accepted him."

Again Neville glanced at Idonea, who was listening eagerly. Seeing her flushed, handsome, expressive face, he could not be surprised that such a man as Sir Richard should have been attracted by her.

"I wonder she can think of that stupid Duke. But what is it to me?" he thought again.

"What care I how fair she be,
If she be not fair to me?"

"I hope you will come to the wedding, Mr. Fairborn; it is to take place almost as soon as we get to London," said Mrs. Dooner. "There are to be ten bridesmaids."

"What wedding? Your son's?" asked Neville, starting from his momentary dream, and pursuing his thought.

"My son's! Not that I am aware of; he left us this morning for town," replied Mrs. Dooner, with a side glance at Idonea, not unperceived either by Neville or Lina.

But Idonea was again busily drawing, and gave no sign beyond a crimson cheek. Still, when Neville took his leave, having first declined to remain to luncheon, she felt as if she must deceive him. But he gave her no chance, for with a cold "Good morning, Miss Umfreville," he left her to her own reflections on the mutability of friendship.

He was more annoyed with himself than she was with him, for he was conscious that his manner must have betrayed a chagrin that he had no right either to display or feel. He was neither her father nor her guardian, therefore why should he concern himself with her matrimonial prospects? Since he was no marrying man himself, what was it to him whether other people made suitable matches or not? And nine out of ten would consider her a very lucky girl to secure so rich a lover as Duke Dooner. If he was the dissenting tenth, he was not a juryman, so his opinion did not signify. It was, however, rather pleasant to him to perceive that Mrs. Dooner sympathised with him, though it angered him again to be assured that there were underhand dealings somewhere. Surely, he thought, there need be no family secrets when such a girl as Idonea was in question, who would—yes, he was fain to confess it—who would grace the coronet of the noble house from which her mother was so proud of being descended.

During these reflections he had been riding ill, and his horse had suffered for his irritability. Chevy found his master unusually wayward, and when unexpectedly checked by the rein and urged on by the whip simultaneously for the twentieth time, he remonstrated by rearing on his hind legs.

"What's the matter, Chevy?" cried the dominating animal, loosening the rein.

But Chevy had not been accustomed to mismanagement, so he took to his hoofs and became unmanageable. He ran away and Neville could not stop him. "Over brake and over brier" went Chevy as if he were after the hounds, and Neville forgot Idonea and her lovers in the excitement of sticking to his back and showing much good horsemanship in so doing. But Chevy, being master of the situation, was resolved to make the most of his temporary supremacy. Instead of leaping a fence that stood in his way as Neville expected, he stopped short, reared again, made a sudden *détour*, and galloped back at fullest speed towards Heronshill.

"He is a wise horse; he likes his home better than his inn," thought Neville, trying to rein him in. "It is no good; like a wilful woman he will have his way, but he must stop at the Lodge gate."

He did stop, or rather was stopped there, for the sudden check disembarassed him of his rider, and Neville found himself ignominiously thrown upon his own drive. He had often wondered why misused horses did not always so disencumber themselves, and he was now made the example of his own theory.

But no sooner had Chevy achieved his victory than he stood still and looked down upon his master. Not in a vainglorious way, as human conquerors now and then consider a fallen opponent, but in a magnanimous, steed-like spirit. He bent his proud head over him as much as to say, "Now you may mount me again, and I will be docile as a lamb."

But Neville, though he took hold of the dragging bridle, could neither rise nor mount.

"You and Idonea have done me some mischief between you; but it was my own fault," he said, stroking the now penitent Chevy's nose.

The gate-keeper came from the Lodge with exclamations at sight of her master.

"Only a spill, Jenny," he said. "I will go into the Lodge for a few minutes."

As he did so he felt pretty sure that he had broken his left arm. Jenny hurried off one of her children to the house without his knowledge, with an order to bring one of his own people. But the child, full of the importance of her message, delivered it before she was half way up the avenue. Meeting Idonea and Lina, she told them that Master Neville had been thrown from his horse, and was at the Lodge.

Idonea, turning very pale, hurried thither, for we count no worldly costs in time of actual anxiety; while Lina went back to the house to announce the accident. Chevy was quietly cropping the turf beneath the trees when Idonea reached the Lodge, and when she entered she heard Neville chatting to its keeper. She was about to turn back, feeling that her fears were unnecessary, when she was perceived by Jenny, who begged her to come in. If she was white with sudden terror, Neville was whiter; for his accident, whatever it was, affected him.

"What has happened? You must be seriously injured," she said.

"It is really nothing," he replied. "I am sorry to have frightened you, Idonea. It is my own fault, for I forgot that Chevy's hide and mouth were not fossils, and he resented my want of memory. How pale you are!"

"You had better come back to the house," she returned.

"I would rather ride to Warkworth. I am all right now," he said, rising. "I hate a fuss."

But no sooner was he again without, and Chevy, obedient to his call, ready to be mounted, than he felt assured that he must give in. Idonea saw that his left arm hung down useless by his side, and that his face betrayed the pain he tried to conceal.

"Chevy, you must come with me; you might have killed your master," she said, taking the horse's rein; then turning to Neville, she added, "Indeed you had better come back to the house."

"Perhaps I had. At any rate it is my own house at present. If I have broken a limb, Jerry will nurse me. I have no one else, for Heatherton has turned sulky and gone home." (Heatherton was his house-keeper.)

Idonea was already leading Chevy up the avenue, and Neville was at her side. She suddenly looked at him with a face so full of pity, that the colour returned to his own cheeks for a moment. Then he grew paler than before, and seemed to stagger.

"You had better lean on me," said Idonea, alarmed.

"As is the fashion in London now-a-days. The weak supporting the strong," he replied, with a smile.

But they were met by a small troop of people from the house, and Idonea suddenly remembered the peculiarity of her position. Indeed, it was not only peculiar but picturesque, for she looked not unlike a Di Vernon, with the splendid Chevy on one side and his master on the other.

Mrs. Dooner was slightly in advance of the approaching party, because Lina had seen her first and told her of Neville's accident. Her silken train, which she had for once forgotten to gather up, rustled with the fallen rustling leaves as she hurried towards him.

"I thought you would be thrown some day. I never saw any one ride so rashly," she exclaimed. "How pale you look! Here, Hawkins, help Mr. Fairborn."

Idonea relinquished the bridle to one of the men, and joined Lina.

"An ill wind that blows nobody any good," cried Lina. "The fallen knight asks our shelter."

Neville managed to get to the house with the help of Hawkins, and went, naturally, to his library, where order had been restored, and "The Graces" replaced in their obscurity.

"We must send for a doctor," was the general cry.

"Thank you very much. I suppose I had better see Dr. Warren before I return to Warkworth," muttered Neville; and a messenger was at once dispatched, while the whole pharmacopœia of Heronshill was examined for his benefit.

CHAPTER XXXVIII.

A child when last we met—a woman now;
Furrows of years upon her once fair brow.

WHEN Percy next visited Madame Ronda he found her sitting up, and so much better that she was engaged in some sort of work. She was seated in an easy-chair, with her back to the windows, the blinds of which were still drawn down. He took a chair opposite the fire, and near the little table on which Mrs. Keene had arranged her working materials and books. Thus, the profile of each was alone visible to the other. Percy had come more on business than for the ministrations of his sacred office, and he began at once upon the subjects that he knew must interest her.

"I yesterday fetched your children from the institution, and gave them into the care of Miss Welborn, according to your request," he said. "She came for them in a cab to my lodgings, but would not come in. I could therefore only see them hurriedly into the cab, and hear her order the driver to go on at once."

"It was all arranged by Mrs. Gore," said Madame Ronda. "It is quite right, and she—and I—are very grateful for all the trouble you have taken. I have seen her and the children this morning, and they said your kindness and that of the superintendents of the orphanage had been—"

She paused, as if unable to find words to express what she felt.

"Merely natural," supplied Percy, hastily. "The little girls interested every one. But they asked to be allowed to return to you, and seemed frightened at the sight of a stranger."

"They are quite reconciled now," said Madame Ronda, and Percy was surprised at her calmness, and felt inclined to accuse her of lack of maternal feeling.

"I had a long letter from my sister this morning," he resumed. "It contains some curious revelations concerning the gentleman you inquired about. Sir Richard Dyke is General Gore's nephew, and was for a short time Sir Richard Gore, only he changed his name on coming into a fortune."

"Then all will be cleared up!" exclaimed Madame Ronda, clasping her thin hands. "I was sure I could not be mistaken. And he is going to marry Miss Charlotte?"

"Yes, almost immediately—as soon as the Dooners are settled in town; and they and Idonea arrive to-morrow."

"You will bring your sister to me as soon as she arrives. I must see her at once. What will become of Heronshill—the place, I mean, that the Dooners are leaving, and that your sister writes of so enthusiastically?"

"Mr. Fairborn, its owner, is there at present, and must continue for a time, at least. He has met with an accident—broken his arm, which, though not a dangerous, is a disagreeable thing for him. Idonea says the bone is well set, but the doctor orders him to be quiet."

"Is he not the gentleman you alluded to as in search of a sister?"

"Why do you ask?"

"Because—you said you had a friend—who was—who was anxious to find a sister, and you inquired if Mrs. Gore had ever been in the North of England."

"Do you know of this sister? Can you help my friend to find her?"

"If I did—if I could, what would be the result?"

"Reconciliation, certainly—happiness, perhaps."

"What if I had seen this lady and knew something of her history? What could I tell her of the brother she left a cold, quiet, undemonstrative boy?"

"Then you have seen her! you do know her! Tell her that the boy has grown into a philanthropic man, undemonstrative still, but true as gold. Tell her that he is lavishing wealth and time to find her, because he has discovered that she was wronged, and her letters to her father intercepted by his mother. Tell her—"

"What! My father never had my letters?"

As Madame Ronda said this she stood up in her excitement, and faced Percy. He, not understanding her, stood also. There, in the firelight, he saw her distinctly for the first time. Face to face, only a small table between them, he recognised one from whom he had been parted nearly twenty years.

"Clarina!" he said.

"Even so," she replied.

"It cannot be!" he exclaimed, uplifting his eyes and holding out his arms as if to embrace he knew not what.

But she sank back into her chair and fainted. He would not summon even Mrs. Keene at such a moment. He took her poor, thin hands, called her again gently

by her name, bathed her wan face, and at last succeeded in reviving her.

"Am I—at home—again?" were her first words as she opened her eyes on Percy.

"You are with friends—under your brother's care and protection," he replied, withdrawing a little.

She covered her face with her hands, and burst into tears. Neither spoke, but oh, the rush of thought and feeling! Although so many years had elapsed since they parted, he felt that womanly shame might mingle with her tears, as pity for her welled from his own eyes. He knew well that in her fiery girlhood she had as good as told him, unasked, that she loved him, while he had never by word or deed fostered that love. She had been but a child—he but a youth; and now they met as man and woman of mature age. Still the minds of both reverted to that stormy evening when father and mother denounced them, and to the fatal morning when she left her home, and he was dismissed from Heronshill. Had a lifetime intervened she would still have felt shame—he pity.

As in those long past years he had been the only person to whom her strong will had yielded, so now the old influence had returned. During these weeks of illness he had helped to soften her proud spirit, and now his kindness and decision completed what he had begun.

Moving his chair to a distance and averting his face, he said, "I see the finger of the Lord in this. You will yield yourself to His guidance who has brought you here by His own mysterious ways?"

As he imagined, this appeal, coming from one who had been so lately her spiritual guide, turned her mind from what had passed between them long ago to what had passed during the last few weeks. She removed her hands from before her face and looked at him. But the emotion still visible on his countenance belied the calmness of his words.

"Tell me of my brother," she said, with something of the imperiousness of the Clarina he remembered.

"He, also, has been divinely guided to this result," replied Percy, shading his brow with his hands. "It was he who took you home through that dangerous fog, and it is he who has—"

"What!" interrupted Clarina. "He my brother? The generous man who saved us from starvation?"

"Yes. And whose are the lodgings in this house in which your—your children stayed while you lay, as it was thought, dying?"

"Then it is my brother who has supplied our wants, even here, not knowing me? He who has been seeking me? Oh! tell me if my father forgave me—if he too searched for me."

"He sought you everywhere—in vain."

"And I wrote, and wrote, and she suppressed my letters. Ah! how she hated me, and I her. May God forgive us both."

She paused while sobs choked her voice, and tears rolled down her cheeks. Percy again returned to the present.

"Neville was searching for you before you met him so mysteriously. He came to this house because the letter that he found of yours bore this address. Mrs. Keene remembered you well, and told him all she knew of you. You said you were going on the stage. A meeting with Miss Welborn sent him to the Continent."

"And I came back to this house because Mrs.

Keene had once been kind to me. She did not recognise me, and I did not care to make myself known to her. And all this time Mrs.—Miss Welborn was seeking me, and I was looking for her."

"And a Higher Power, who works His will in us, was also seeking—and finding you."

"Yes. I acknowledge my weakness, and His strength."

Another long pause, broken again by Percy.

"And who shall tell your brother this strange tale?"

"I will. I have done the wrong, and I will atone for it. I will humble myself before him, my younger and nobler. As I left my home, so will I return. Promise that you will tell no one this, my secret, until I give you permission. I have betrayed myself, but you must be changed indeed if you betray me."

"Never, Clarina, never!"

The familiar name was drawn from him by the sudden pathos of her voice and an appealing glance. He forgot, for the moment, her other name, her children, her past history, and remembered only the young girl who had been wont to subdue while obeying him.

"And he is ill—my brother! He who has done so

much for me has none but hirelings to wait on him," she murmured, after a momentary abstraction. "When may I see Idonea?"

"The day after to-morrow, if possible."

"She must not know who I am. You promise not to betray me to her—to any one? I trust you as myself."

The impetuosity of this speech recalled to Percy the girl Clarina. Possibly the glance that met hers also reminded her of the youthful Percy, for she looked into the fire, and said penitently,

"Forgive me; I have offended you, Mr. Umfreville."

"Offended me! At such a moment! after so many years! Oh, Clarina!" he replied, and with sudden impulse rose and stood by her side.

Both were trembling with some strong emotion, but neither spoke nor moved. At last Percy mastered his, and, as if by some sudden impulse, knelt down.

"Let us thank God for His unspeakable mercies," he said, and in a husky voice offered prayer and praise for her who "had been lost and was found," while tears fell on his bowed head from eyes that had long wept only bitter brine.

WILLIAM HARVEY.

BY JAMES RISDON BENNETT, M.D., PRESIDENT OF THE COLLEGE OF PHYSICIANS.

FAMILIAR though the name of William Harvey is, as that of the great physician who discovered the circulation of the blood, there are comparatively few outside the ranks of his profession who can appreciate what that discovery implied, or the extent and value of the benefits that humanity has derived from his genius.

The name of Linacre will always be illustrious as one of the earliest and most striking examples of the combination of classical literature and general learning with medical science, which, down to the present day, has contributed greatly to elevate the character and promote the utility of medicine as a profession.

But the distinction acquired by Harvey is of a higher and far different character. He inaugurated a new era in medicine. Of Newton it was said with equal truth and grandeur in the well known lines,—

"Nature and Nature's laws lay hid in night;
God said, 'Let Newton be,' and all was light."

So may it be said that till Harvey arose and proclaimed his great discovery, animal physiology, and to a large extent anatomy also, were surrounded by darkness that no one had been able to penetrate. What became of the food that was taken in, and how it was distributed for the nutrition of the body and maintenance of life, no one knew,

A good deal of anatomical knowledge had been acquired by the opening and dissecting of dead bodies, both of men and animals, but for the most part the real nature of the marvellous contrivances that were thus revealed were not understood, and when glimpses of their true purport were obtained, these were too often obscured by the various and absurd theories and speculations with which they were enveloped. Certain facts of the utmost importance

in connection with the circulation of the blood had, however, been well established, which, when duly considered and estimated by Harvey's genius, obtained a fuller meaning, and served him as important stepping-stones to his further progress. From the earliest period of his professional studies he appears to have been impressed with the importance of ascertaining facts for the basis of all reasoning on medical subjects. He, however, entered on the pursuit of medicine with a mind well trained by the study of logic and natural philosophy during his residence in the University of Cambridge, which unquestionably proved of the utmost advantage to him.

W. Harvey was descended from a highly respectable family in the county of Kent, and was born on the 1st of April, 1578, at Folkestone. At ten years of age he was sent to the Grammar School at Canterbury, and at sixteen was entered at Caius College, Cambridge. Leaving this University about the year 1598, he betook himself to Padua, then the renowned school of medicine in the world, and where the celebrated Fabricius ab Aquapendente was Professor of Anatomy. Here he attracted the marked attention of all the professors, and elicited from them the highest estimation of his abilities and attainments. On the 25th of April, 1602, the diploma of Doctor of Medicine was conferred upon him in terms of unusual eulogy, and he forthwith returned to England, was incorporated as a doctor at Cambridge, and settled in London as a physician. Having married a daughter of Dr. Launcelot Brown, physician to Queen Elizabeth, he joined Linacre's College of Physicians, and became a fellow thereof in 1607. On the recommendation of King James I, and the President and Fellows of the College of Physicians, he was appointed Physician to St. Bartholomew's Hospital. In 1615 he was elected Lumleian Lecturer

at the College of Physicians, and in 1616 commenced the lectures in which he subsequently propounded those views on the circulation of the blood which were destined to render his name immortal.

What were the views entertained respecting the office of the heart and bloodvessels up to this date it would occupy too much space to attempt to set forth. It is sufficient to say that they were of the most contradictory, imaginary, and absurd character, and for the most part remote from the truth. The chief reason, perhaps, why Harvey's predecessors were kept wandering in the mazes of speculation, and remained ignorant of the essential character of the heart's functions, were that, on examining dead bodies, the arteries were always found empty of blood, and were therefore supposed to be merely channels for the conveyance of spirits—that is, air tubes, whence their name, "arteries;" whilst the veins were always found to contain blood, which, it was imagined, oscillated backwards and forwards, to be brought, by means of the heart and lungs, into contact with the air or spirits. And it would appear that one of the first things that gave Harvey the clue to his discovery was the observation that the veins were provided with valves at various intervals, the structure of which showed that they allowed the blood to pass freely towards the heart, but prevented its falling back towards the extremities.

That this was really the action of the valves of the veins Harvey showed by the simple experiment of passing a ligature round a limb as in the usual procedure for bleeding a patient from the arm, when the veins below the ligature—that is, on the side away from the heart—became swollen and distended, whilst on the side nearest the heart they are emptied, showing plainly that in the veins, at all events, the blood passes only in one direction, towards the heart. Harvey was not, however, the discoverer of the valves of the veins. His celebrated teacher, Fabricius, had demonstrated their existence, and spoke of their regulating or moderating functions. But Harvey asserted and proved that their real function was to facilitate the return of blood from the extremities to the heart. By a similar simple experiment, though necessitating recourse to vivisection, he showed, by placing a ligature round an artery, that the reverse effect was produced and the vessel became distended on the side nearest the heart, and was emptied on the distal side, thus proving that the arteries also contained blood the current of which was from the heart towards the extremities. The power by which the blood is driven through the arteries to the extremities was referred by Harvey to the action of the heart alone, whose contractile and forcing power he demonstrated by experiments on living animals. He remained ignorant of the elastic power of the arteries themselves by which the central power of the heart is in a measure regulated and increased. Nor was he able to demonstrate the connection between the extreme capillary twigs of the arteries and the radicles of the veins, *i.e.*, the method of intercommunication between the outgoing and returning currents of the blood.

The compound microscope was not then in use, though invented by a Dutchman, named Jansen, in 1590, and it is by this alone that we can demonstrate in the transparent web of the frog's foot that the globules of blood hurrying through the minute terminal arteries actually pass into the network of vessels, termed *capillaries*, which are continuous with

the radicles of the veins, where the blood is seen to enter on the return current back again to the heart. Harvey, however, maintained the existence of certain channels of intercommunication between the two currents which he spoke of as "*porositates carnis*." An ingenious attempt has recently been made to prove that by the term "*porositates*" Harvey meant "*ferries*"* or ferry vessels, by which the blood is sent across from one side to the other, and in one direction only. But though it may be conceded that Harvey made use not only of spectacles but of a convex lens, there is not sufficient ground to warrant the opinion that by his term "*porositates*" he meant anything more than "*pores*"—the pores of the flesh—implying that the blood was absorbed or sucked up by the tissues and thus passed from one set of vessels to the other. To subsequent microscopic investigations we owe the complete and irrefragable demonstration of the capillary network by which the loops of intercommunication are formed.

From the MS. volume of Harvey's lectures, in the British Museum, which, after having been lost sight of, has been recently rediscovered, he appears to have fully established his doctrines in 1616, but first promulgated them in his lectures in 1619, after reiterated experiments and long and patient study. His immortal "*Treatise on the Motion of the Heart and Blood*," dedicated to Charles I., was published at Frankfort in 1628, when he had attained his fiftieth year, when his reputation as a physician had been long established, and when his brilliant discoveries were the theme of discussion and admiration in all the seats of learning throughout Europe—not that his doctrine was accepted without opposition and even scorn and contempt—for he did not escape the opprobrium and contradictory treatment that has befallen most other great discoverers. At first his doctrines were denied and repudiated, subsequently it was affirmed that they contained nothing that was not already known.

One of the great obstacles to the reception of Harvey's doctrine was the difference in the colour of the blood in the arteries and in the veins, but when it was seen that by the passage of the blood through the lungs and exposure to the air the change from purple to scarlet was effected, the real nature of the function of respiration became known, and a flood of light was thus thrown on the whole field of physiology. The nature of the chemical changes thus effected was not indeed then known, but Harvey's discoveries proved that the blood which was driven from the left side of the heart through the arteries to nourish all parts of the body had come from the lungs in a bright and florid current, and returned to the right side of the heart in a dark and murky stream charged with impurities, and having from the right chambers of the heart been sent through the lungs, there was again purified, to pass again to the left chambers of the heart, thus making the entire circuit of the body.

Although the great work on the motion of the heart and blood is that on which Harvey's undying reputation is based, it does not comprise the whole of his labours. His "*Exercitationes on the Generation of Animals*" seems to have occupied almost as much of his time as his treatise on the circulation. It contains a large mass of facts and observations wholly

* Deriving his Latin phrase "*porositas*" from the Greek noun *πορος*—a ferry or passage.

original, on which he based his doctrine of "Omne vivum ab ovo." These observations were made chiefly on the development of the chick in the hen's eggs. He had also amassed a number of observations on the generation of insects, and records of his dissections of frogs, toads, and other animals, all of which were unfortunately lost when his apartments at Whitehall were plundered at the beginning of the Great Rebellion. This loss he never ceased to lament, and said that "for love or money he could never retrieve or obtain them."

With this brief notice of his scientific labours, enough, perhaps, for the general reader, we resume our biographical sketch of this remarkable man. Here too we must confine ourselves to a few leading facts and characteristics. Living as he did in times of excitement and lasting historic importance, the records of his life are mixed up with the public events of his day, and are replete, many of them, with topics of graphic interest.

After the promulgation of his new views regarding the motion and power of the heart, and the complete circle through the whole body made by the blood, he stated to a friend that his practice as a physician greatly fell off. By the vulgar he was considered crack-brained and called a quack, applying to him the Latin term "Circulator" in its opprobrious signification, and to many of his contemporary physicians he became the subject of envy and detraction. His just reputation, however, speedily outgrew all detraction. He was made physician extraordinary to King James I, and, in 1632, physician to his successor, Charles I, by whom he was treated with the utmost regard and favour, and who, with many of his distinguished courtiers, attended his anatomical demonstrations and witnessed his experiments. About this time he went abroad as physician to Thomas Howard, Earl of Arundel, during his embassy to Vienna. During this period, Aubrey records that Harvey would always be making excursions into the woods, making observations of strange trees and plants, and sometimes ran the danger of being lost, so that "my lord ambassador would be really angry with him, for there was not only danger of thieves, but also of wild beasts."

In 1633 Harvey accompanied King Charles in his journey to Scotland, and made an excursion to the Bass Rock, in the Frith of Forth, of which he gave a curious and picturesque description, expatiating on the prodigious flocks of sea-fowl and solon geese inhabiting the island, "more, indeed, than in a clear night, when the moon is absent, there are stars to be discerned in the firmament." Making special mention of the thick coating of the rock by the excrement of the sea-fowls, he describes it as shining with a "white glazing, and the cliffs resembling mountains of the purest chalk, though the native complexion of the stone be obscure and black." This led him to ingenious speculation on the composition of egg-shells, though he could not have known that into the composition of egg-shells there really enter the same chemical constituents as are found in the deposits of the birds.

On the breaking out of the Civil War, Harvey followed the fortunes of the king, and was present at the battle of Edgehill. He himself relates that on the day of the battle, being left in charge of the young princes while the fight was going on, he withdrew with them under a hedge, and took out of his pocket a book, which he began to read. He had not

long been absorbed in his study when a cannon-ball grazed on the ground near him, and made him remove his station. Retiring after the battle with the king and the rest of the royal household to Oxford, he remained there for some time, pursuing his favourite studies and enjoying for a short time honourable leisure as Master of Merton College, to which he was appointed by the king's mandate in the room of Dr. Nathaniel Brend, who followed the opposite party, having taken the Covenant. On the surrender of Oxford to the Parliament, Harvey lost his appointment of warden, and returned to London, when he became the guest of one or other of his brothers, then men of wealth and high standing as merchants. He was then, probably, about sixty-eight years of age, and appears to have relinquished practice.

After living for some time with his brother Eliab, either at his house in the Poultry or at his country residence at Roehampton, he betook himself to a house which he possessed at Combe, in Surrey. Here he indulged in a whim of being much in the dark, and passed a good deal of time meditating in a cave that he constructed in his grounds. It was here that he was found by his intimate friend Ent, the result of whose visit was the publication of the second great work, his "Exercitationes on the Generation of Animals." Ent's description of this interview is extremely interesting and graphic. After saluting the great man, and inquiring if all were well with him, Harvey replies, "How can it be while the Commonwealth is full of distraction and I myself am still in the open sea. And, truly, did I not find solace in my studies, and a balm for my spirit in the memory of my observations of former years, I should feel little desire for longer life. But it has so turned out that this life of obscurity, this vacation from public business, which causes tedium and disgust to so many, has proved a sovereign remedy to me. And, truly, the examination of bodies of animals has always been my delight, for I have thought that we might thence not only obtain an insight into the lighter mysteries of nature, but there perceive a kind of image or reflex of the Omnipotent Creator Himself. The whole earth now lies open before us, and the zeal of our travellers has made us familiar not only with other countries and the manners and customs of their inhabitants, but with the animals and vegetables and the minerals also that are met with in each. And, indeed, there is no nation so barbarous which has not discovered somewhat for the general good that had been overlooked by more civilised communities. But shall we imagine that nothing will accrue to science from such advantages as we now possess, or that all knowledge was exhausted in the earlier ages of the world? If we do the blame must certainly attach to our indolence." After further pressure from Ent to give the world the advantage of his labours and genius, Harvey replied, smiling, "Would you be the man who should recommend me to quit the peaceful haven where I now pass my life, and launch again upon the faithless sea? You know full well what a storm my former lucubrations raised. Much better is it oftentimes to grow wise at home than by publishing what you have amassed with infinite labour to stir up tempests that may rob you of peace and quiet for the rest of your days." After making further difficulties, and urging that his work was not complete, and especially that it did not contain his lost observations on the generation of

insects, he consented, and handed to Dr. Ent the precious ms., with which, says Ent, "I went from him like another Jason in possession of the golden fleece, and when I came home and perused the pieces singly I was amazed that so vast a treasure should have been so long hidden, and that while others with great parade exhibit to the public their stale trash this person should seem to make so little account of his admirable observations."

Harvey was now in his seventy-first year, and the remainder of his life was spent almost entirely in acts of generosity and plans of munificence. Although he does not appear to have been eager for money or to have made much by his profession, having inherited a paternal estate, a widower and childless, and maintaining no costly establishment, he was, at all events towards the end of his life, in very easy circumstances. This, however, was probably mainly due to the prudence and care of his worldly concerns by his brother Eliab, for Aubrey says that "for twenty years he took no care of his worldly concerns." He had long had deeply at heart the welfare and improvement of the College of Physicians and the advancement of the profession to which he was warmly attached.

In 1651 Dr. Prujean, the President of the College, made to them the munificent offer, on the part of an anonymous donor, to rebuild and enlarge the college, and on the completion of the works, Harvey, in the presence of his colleagues, was announced as their illustrious benefactor, and made over to them the title-deeds and his interest in the buildings. The college voted the erection of a statue to him, with the following inscription:—

"Gulielmo Harveio,
Viro monumentis suis immortali
hoc insuper Collegium Medicorum Londinense
Posuit
Qui enim sanguini motum
ut et
Animalibus ortum dedit, meruit esse
stator perpetuus."

This statue and Harvey's Buildings were destroyed in the Great Fire. In 1654 the college elected Harvey as their president, an honour which, however, he declined on account of his age and infirmity. But in 1666, at the first anniversary of the feast instituted by himself, he made over to the college his paternal estate of Burmarsh, in Kent, which the college still enjoys.

The objects which Harvey had in view in making this munificent gift are set forth in the indenture conveying the estate, among which is the following: "To maintain friendship there shall be at every meeting once a month a small collation, as the president shall think fit, for the entertainment of such as come; and once every year a general feast for all the fellows: and on the day when such feast shall be kept, some one person of the said college shall be from time to time appointed as the president, who shall make an oration in Latin publicly in the said college, wherein shall be a commemoration of all the benefactors of the said college by name, and what in particular they have done for the benefit of the said college, with an exhortation to others to imitate those benefactors and to contribute their endeavours for the advancement of the Society according to the example of those benefactors. And with an exhortation to the fellows and

members to search and study out the secrets of nature by way of experiment; and also for the honour of the profession to continue in mutual love and affection among themselves, without which neither the dignity of the college can be preserved, nor yet particular men receive that benefit by their admission into the college which they might expect, ever remembering that 'Concordia res parvæ crescunt, discordia magnæ dilabuntur.'"

The oration thus instituted has continued to be annually given ever since, but latterly in English, and without the feast.

In 1654 Harvey resigned the lectureship at the college which he had continued to hold, conscious from his age and the inroads of disease that his great change was awaiting him. He had seen his grand discovery of the circulation of the blood universally accepted and inculcated in most of the medical schools of Europe, having been, according to Hobbes, "the only one that conquered envy in his lifetime and saw his new doctrine everywhere established." * Worn down by gout he died June 3rd, 1657. Great preparations appear to have been made for his funeral obsequies, for it was not till June 26th that his body, attended by the fellows of the college far beyond the walls of the city, was conveyed to Hempstead, where it was deposited in a vault prepared by his brother Eliab.

There is a fine full-length portrait of Harvey in the College of Physicians by Jansen, which corresponds with the description of his person given by Aubrey, who tells us that "he was not tall, but of the lowest stature, round faced, olivastick complexion, little eye, round, grey-black, full of spirit; his hair black as a raven, but quite white twenty years before he died." "In temper he was like the rest of his brothers, very choleric, and in his younger days he wore a dagger, as the fashion then was, which he would be apt to draw upon every occasion." He and all his brothers lived together in singular affection and peace, and there are many indications that attachment and friendship were marked characteristics of his nature. More than one widow and helpless woman was provided for in his will, which contains numerous small legacies to friends and relations that they may buy something to keep in remembrance of him. "He had unbounded confidence in Nature, and was keenly alive to her perfections and bounteous adornments. He had the most profound veneration for the Great Cause of all those wonders with which he was so well acquainted. He was accustomed to say that he never dissected the body of any animal without discovering something which he had not expected or conceived of, and in which he recognised the hand of an allwise Creator. To this particular agency, and not to the operation of general laws, he ascribed all the phenomena of Nature." (Willis.)

His mind was well stored with knowledge on subjects outside his professional pursuits, and he was a great admirer of Virgil, with whose poetry he is said to have been sometimes so transported as to throw the book from him with exclamations of rapture.

"His religious sentiments appear to have been active, and the exordium to his will is unusually solemn and grand, and throughout the whole of his work on generation he seizes every opportunity to

* Hamey quaintly describes this event, "Gulielmi Harveii fortunatissimi anatomici desit sanguis moveri tertio die Junij 1657, cujus aliquot perennem motum in omnibus verissime asserverat."

give utterance to his sense of the immediate agency of the Deity. Like many of the ancient philosophers, he viewed the universe and its parts as actuated by a supreme and all-pervading intelligence, but on pure Theistic notions he unquestionably grafted special faith in Christianity. He speaks of 'Christ our Saviour as of men the most perfect,' and in his will 'humbly renders his soul to Him that gave it,

Methinks in art's great circle others stand

Locked up together hand in hand :

Every one leads as he is led ;

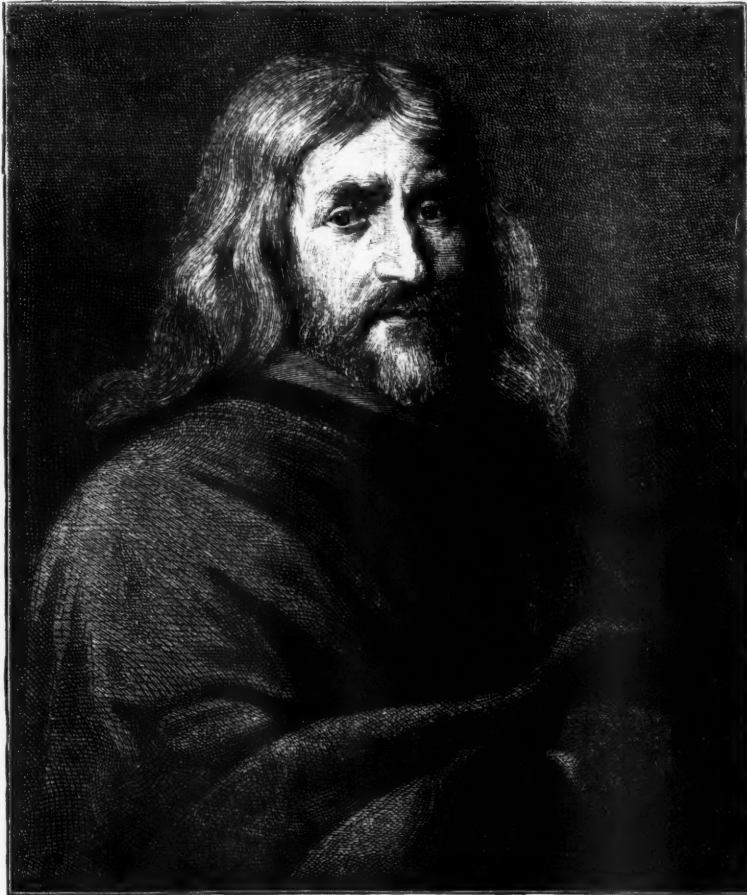
The same bare path they tread,

A dance like that of fairies, a fantastic round,

With neither change of motion nor of ground,

Had Harvey to this road confined his wit,

His noble circle of the blood had been untrodden yet."



[From the Portrait Exhibited in the National Portrait Exhibition.

and to his blessed Lord and Saviour, Christ Jesus.' There is no reason to think that his Christianity was of the type of Socinus, Hobbes, or Lord Herbert of Cherbury, his contemporaries. He was, indeed, acquainted with all the men of letters and science of his age, and has been commemorated in the poetry of both Dryden and Cowley." Cowley's ode, not very well known, is deserving of quotation :—

" Thus Harvey sought for truth in truth's own book—
Creation—which by God Himself was writ ;
And wisely thought 'twas fit
Not to read comments only upon it,
But on the original itself to look.

Harvey's grand distinction as a physiologist consists in his constant appeal and adherence to facts as opposed to speculation and theory in establishing the truth of his grand discovery. In this he is an example to all succeeding students of Nature. In the course of the angry controversies to which his discovery gave rise, he repeatedly complains " that his views have never been opposed on the ground of an appeal to facts." " The circulation of the blood," he says, " has now been before the world for many years, illustrated by proofs cognisable to the senses, and confirmed by numerous experiments ; but no one has yet attempted opposition to it on the ground of ocular testimony. Empty assertions, baseless arguments, cap-

But that does not fully represent the trade. During the year, those vessels unloaded 1,180,586,150 feet, without taking into account what was then in the yards, as well as the vast number of 125,640,000 "shingles." These are pieces of thin boards used to roof houses with, one foot to eighteen inches wide, two feet long, a quarter inch thick at one end and growing thinner to the other end where it comes to an edge. They are laid so as to lap over each other, leaving only eight inches to the weather, and a very good roof they make, looking very much like a slate roof. Pine shingles do not warp by sun and rain, but other woods do, so pine is the best. Cedar posts are used for making fences, and timber for heavier work.

The lumber trade, as may be inferred, keeps a large number of schooners and steamboats constantly employed between May and November (the season for navigation), bringing from the mills to the wharfs where it is sold.

There are about seventy-five ports in what may be termed the lumber regions, on the line of the lakes, from which the lumber is obtained, and a few particulars of a visit to one of these ports may be interesting.

Taking an evening boat from Chicago, after ten hours' sail we enter the Muskegon river. A mile farther on, in a beautiful lake seven miles long and three or four wide, is Muskegon, on the eastern shore of Lake Michigan. About twenty-two mills are around it. We will go into one. It is a large frame building, erected of lumber. The huge timbers of which it is framed indicate great strength. On one side is a boiler-house containing two immense steam-boilers and a steam-engine. In the water of the lake beside it is an enclosure of four or five acres of water, the fence being timbers chained together and held in place by posts sunk into the bottom. This enclosure is filled with logs floating in the water; the enclosure is called a boom, and every log sawed in that mill is taken out of that water on a log slide and sawed wet. Men with long hooked spikes pick them out. The mill is two storeys high, the lower storey containing heavy machinery, and here and there are hand-carts catching sawdust as it comes down from above. In this way the floor is kept clean, notwithstanding the constant fall of sawdust.

We now ascend to the place of business. A huge log is drawn up from the log slide. Two men tackle it with long iron levers, to which a clam is attached, and roll it to its place and put it in position as if it were mere play. It goes on a tramway, where an immense circular saw revolves with lightning speed, and off comes a slab from one side; then back it comes, is turned, the same process repeated, and a slab from the other side comes off. Now it is turned flat side down and up, shifted over, and sent along another tramway, where it reaches a dozen immense saws going up and down with irresistible power. That is called a gang. The log is forced up to them and a dozen boards are sawed at one time. It is perfectly fascinating to watch the process as some cut joists, others scantlings, others boards, and to see how every bit of those logs is utilised into building material.

Even the sawdust has its uses. Part of it is used as fuel to keep up the fires, and in a new country it makes a better road than sand or the primitive soil. Then, too, sawdust is good for beds for horses.

Thus the mill goes all the time from May to

November, when the logs are all gone and the lumber has been sent away. The fires go out in the furnaces, the mills are locked up, and the fifty to seventy men engaged about it pack up their traps and start for the Pinerias.

It requires some preparation to go off miles and miles away, where for nearly five months they will see no human habitation but such as they make for themselves, hear no voices but their own, and be surrounded by a great, dark, and dense forest, where the sighing of the pines, the whistling of the winds, and their own voices, are all the music they will hear. They must have suitable clothing—coarse, but warm. Every man must have one or more axes. They must have a grindstone to keep them sharp, provisions of various kinds, a cooking stove, pots and kettles, knives and forks, plates, cups and saucers, and two or three of the men will have their wives with them to do that work which women can best do.

To convey all these they must have horses and waggons, and ere long they reach a country beyond railroads or even common roads; but they know, as it were, by intuition, how to find the exact spot, and in due course reach it, and are on the exact lands owned by the proprietor of the mill.

A few huts erected, and every necessary preparation completed, they now address themselves to their winter's work. This is cutting saw-logs. The man with his axe chops a notch into one side of the tree clean to its heart, then on the opposite side, and he will make the tree fall with unerring certainty on the exact spot intended. The branches are now cut off, the brushwood laid by itself, and then the huge trunk is cut into suitable lengths for saw-logs.

Soon the snow begins to fall, and by-and-by the ground is well covered, sometimes many feet deep, but it does not hinder their work; indeed it helps it, for now they attach chains to the logs, and make their horses draw them over the snow to the nearest river or some tributary. As the streams are frozen up, they can only leave them there to be floated down when the snows and ice are melted, and the streams again begin to flow. But before leaving them they brand every log with a branding iron, for in a few months, when they get down stream, they will mix with other people's logs, so there must be some way to distinguish the rightful ownership.

A winter with a logging party would appear to be very dull and monotonous, but to the thorough backwoodsman it has a charm that is peculiar—a positive fascination. He would not exchange it for the more social city life. Here he spends the long dreary winter, the thermometer being sometimes 10, 20, or 30 below zero, and yet he cares not for the cold, he eats heartily, sleeps soundly, smokes his pipe, sings his songs, reads his book, and when spring comes he returns to his mill-work. A few are left for a while to see that all the logs are on the streams, which they choke up for a while and then drift away. The future care of the logs is left to the boom-men, who scour the streams, drifting every log down, and by the fall of the year every one has been brought to its owner's boom.

We have thus traced the material from the lumber yard to the place of its manufacture, and from thence to the Pinerias, where the trees are cut. So the work goes on from year to year with scarcely any perceptible diminution of the immense forest with which the vast tracts of country are covered.



LEGAL ANECDOTES.

CHIEF BARON POLLOCK.

ONE of the most remarkable judges within the memory of most of our readers was Sir Frederick Pollock, the late Lord Chief Baron of the Exchequer. He was the son of a wealthy saddle-maker in Oxford Street. His abilities appear to have been very precocious, and it is said that when a boy he insisted on choosing his own school. His father, however, eventually insisted on his entering St. Paul's School, then presided over by Dr. Roberts. To both school and master he entertained a great dislike, which, increasing, he one day quietly told the head-master that he considered he was not properly instructed in the school, and that there was no one there capable of properly teaching him, and that he had determined to leave. The doctor remonstrated and threatened, but the determination was carried out, and young Pollock walked off home. The head-master called on the father, and bitterly complained of the son's wilfulness. The old man was as polite as possible, but declared that he had no "hold on the boy." The doctor left, solemnly prophesying that his late pupil would "come to be hanged." Years afterwards, when "Fred Pollock" had successively become senior wrangler at Cambridge and Attorney-General of England, Dr. Roberts and the father again met. "My boy Fred isn't doing so very bad, doctor," said the father. "Ah, my dear sir," was the reply, "didn't I long ago prophesy that he would occupy an elevated position?"

The Chief Baron married twice, and had by his two wives, twenty-five children, of whom twenty survive, ten of the first wife, and ten of the second. At the time of his death he had forty grandchildren, and four great-grandchildren. Although he lived to be over eighty, he never wore spectacles. Perhaps no great man was ever more blessed by seeing his family rise to distinction. Before his decease one son had become an accomplished author, Senior Master of the Exchequer, and Queen's Remembrancer; a second became also a Master of the Exchequer; a third Associate of the Court; a fourth an eminent London physician; and yet another one of the Supreme, and one of the best judges of our day; whilst his eldest grandson took the highest honours at the university in which his grandfather had himself more than half a century before been senior wrangler.

Neither at the bar nor in Parliament did Sir Frederick Pollock fulfil the expectations formed from his distinguished University career. Scholarly, sensible, correct in style, and sound in law, he could not fail to rise to a position of wealth and reputation. But he lacked the gifts which most easily secure popularity. The matter of his speeches was always good, but the manner was unattractive and even heavy. There was never the least touch of humour nor play of fancy. In the amusing sketches of "The Bench and the Bar," by the author of "Random Recollections of the House of Commons," the writer says, "I have never heard him say anything which was calcu-

lated to excite the admiration of a popular audience. His voice wants clearness and variety. The only redeeming quality as a speaker is that he is brief, and that he confines himself to the real question at issue. The expression of his countenance is demure. To see him laugh would form the subject of conversation among the bar."

The qualities which seemed to hinder popularity at the bar marked the highest merit on the bench. Solid, grave, learned, and judicious, the memory of the Lord Chief Baron Pollock will long be cherished and his name honoured.*

The Chief Baron had a great idea of the dignity attaching to a judge when on the Bench; and we have many times seen him, when seeking during a trial the support of a glass of sherry, drink the wine brought by an usher, from a *teacup*, carefully stirring the same, and blowing it, as if it were only the fluid "which cheers but not inebriates." Sir Frederick Pollock was remarkable also for his passive demeanour on the Bench, and of him it might be said as was long before remarked by the witty Jeekyl of the placid Justice Graham, that "none but his laundress could ruffle him;" though, as Graham in his day wore ruffles, and Pollock did not, the remark better applies to the former judge.

The Warwickshire Assizes some years ago were held both at Coventry and Warwick, and only twelve miles apart. One bright August day at the conclusion of the Coventry business a closed carriage waited at the judge's lodgings at Coventry to convey his lordship and his two clerks to Warwick. It was a warm afternoon, and the chief thought he would like to ride outside. "Coleman," said he to his principal clerk, a singularly handsome old gentleman, who had been with him all his life, "you and Stephen (Coleman's son) ride inside, and I will go on the box, but they mustn't know I am the judge as we go along. You must 'do the judge,' and mind you do it well." The journey progressed prosperously; on arriving at Kenilworth, halfway to Warwick, the driver pulled up to water his horses. The hotel-keeper rushed out and inquired of the assumed servant on the box if "his lordship inside" would take any refreshment. "My lord," said the Chief Baron, calling to his representative inside, "will your lordship be pleased to take anything here?" Coleman, fully prepared to carry out his instructions to "do the judge well," immediately answered, "Oh, certainly, certainly; a bottle of champagne, my good friend; your best, mind, your very best." The wine was brought out with great politeness; Coleman drank one glass, his son another. "Give a glass to my man on the box," said Coleman; "I dare say he is thirsty, and he will settle with you." Afterwards, when at Warwick, Sir Frederick commended the manner in which his clerk had carried out his instructions, but suggested that he had possibly a little *overdone* it with regard to the wine, and did not again ask him to act so distinguished a part.

TROUBLESOME WITNESSES.

Numerous anecdotes have been told of witnesses. The greatest fault alleged against them is that, as

* In early volumes of the "Leisure Hour" we were often indebted to the Chief Baron for valuable notes and useful suggestions. The article which concludes the volume for 1864, with the heading, "Once for All," shows his tone of thought on graver topics. It is in the same strain as the noble paper with which Dr. Johnson closed "The Idler."—Ed. L. H.

a rule, they will not "speak out." No sooner do they enter the witness-box than their voice is reduced to a half-whisper. "What are you?" we once heard the late Baron Platt say to a witness of this sort, a big, hale man, with the voice of an infant. "A butcher, my lord," was the reply, heard scarce a couple of yards off. "Then, if you are a butcher," roared the judge, "speak like a butcher, can't you?" Some witnesses, too, are exceedingly modest and reticent. An old lady, interrogated as to her age, bridling up, answered that she was "this side of forty." "Ah," said the judge (Baron Parke), "but do you mean the *right* side or the *wrong* side, *my side or the other side*?" No explanation, however, could be obtained, and the lady left the box averring again that she was "this side of forty."

Many witnesses, however, are perfectly calm and collected under the most rigorous cross-examination, and are a perfect match for the counsel, who is too often using his best efforts to confuse them. "Now, sir," we once heard a counsel say, rising to browbeat a medical gentleman who had just finished his evidence "in chief"—"now, sir, and how many of *your* patients are lying six feet under ground at the present moment?" "I don't know," was the answer; "I suppose about as many as there have been of *your* clients swinging six feet above ground." We heard a witness of this kind once examined at Kingston as to the badness of the gas supplied from a certain gas company, against which an action had been brought. He stated, amongst other things, that the gas was so impure, that after using it for a few weeks all his ceilings had to be *whitewashed*. "And do you know of anything else being whitewashed?" asked Serjeant B—, commencing his cross-examination. "Yes; two of the directors of the company were, almost immediately afterwards," replied the witness.

A clever little barrister, who afterwards became a judge and is still living, was many years since examining, on the Quarter Sessions of one of our Midland Counties, an old sailor, when the following conversation took place.

Counsel.—What are you?

Witness.—I am an old sailor. I fought in the celebrated action between the Chesapeake and the Shannon, and was pensioned.

Counsel.—Well, what are you now?

Witness.—I am a cobbler and bell-hanger, and blacksmith and cattle-doctor, and such like.

Counsel.—You go to fairs, don't you?

Witness.—Oh, yes; and sell gingerbread and sweets and all that.

Counsel.—And do conjuring?

Witness.—Oh, yes; I do a bit of conjuring.

Counsel.—Well, show us a trick or two now.

Witness.—Well, this isn't quite the place, but I'll tell you what I will do. If you will take off your wig, and ask your learned friend, as you call him, to grease your head, I'll try and swallow you whole, and then you'll be no more trouble to me nor nobody else!

A "horse cause" was once tried at York, in which the facetious Serjeant Wilkins was for the defendant, his duty being to prove that the horse in dispute was "sound in wind and limb." One of the witnesses as to the breach of warranty was an elderly clergyman, and after his evidence in chief was concluded, the following conversation took place.

Serjeant.—Well, witness, you're a parson, you know; you don't know anything about horses, do you?

Witness.—Yes, I think so. My father was a great horse-breeder, and I've studied them pretty considerably.

Serjeant.—Oh, I dare say you're a very clever fellow. Can you tell my lord and the jury the difference between a horse and a cow?

Witness.—Why, there are so many points of difference. One is the same as between a bull and a *bully*, the bull has horns and the *bully* has not! (Politely bowing to the serjeant, who sat down.)

THE INDIANS OF CANADA.

GREAT BRITAIN is a nest of curious birds. Among her nestlings are 100,000 Red Indians, thus distributed: Ontario, Canada, 15,666; Quebec, 10,917; Nova Scotia, 2,116; New Brunswick, 1,425; Manitoba and North-west territories, 27,308; Athabasca, 2,398; Rupert's Land, 4,730; British Columbia, 35,154; Prince Edward's Island, 296. These are, however, for the most part, mixed races, half-breeds of Canadian, English, or German intermixtures. They represent several millions of aborigines occupying the country as absolute owners at the time of discovery, whose ancestral property has been reduced through successive generations, partly by the conquests made by their civilised successors, and partly by so-called purchases made by the latter at rates averaging about twopence per acre. Nothing now remains of several of the proudest tribes save the names, and these principally in poetry and books of travel. The Iroquois, allies of the British during the wars with the French, are represented by two bands, one living on the Grand River in adjacent settlements in Canada, the other a prosperous set of Indian farmers in New York state. The Hurons are reduced to a mere handful, mostly refugees in Quebec, and a few in Kansas.

"Such," says Mr. Dawson, the Assistant Director of the Geological Survey of Canada,* "has been the fate of these cultivators of corn and tobacco, the natives of all others of the northern part of the continent most nearly attaining a civilised state." The Algerkins, a mighty nation once stretching across the continent from the great lakes to the ocean on either side, now occupy small reserves in Canada; the Abenakis, the French allies in the days of their power, have decreased too 335; the Sioux, the Chippeways, and the Crees, once names of terror sounding through the forests and prairies of a continent, are now scattered in inconsiderable detachments in pursuit of the herds of buffalo, which retreat, like them, towards a fated extinction by the march of the white men westward. The Blackfeet, after selling us 35,000 square miles of their vast territory, have been reduced "by about one-half during the last twelve or fifteen years, by bad whisky, murders, and small-pox."

In British Columbia the question how to dispose of 30,000 Indians, roughly divided into coast and forest tribes, but all apparently immovably wedded to migratory habits and the life of a "casual," will be one of difficulty as our industrious population pours into the grassy valleys and plains. The young men

* Our facts and quotations are taken from an able report on the subject made by Mr. Dawson, printed in the "Canadian Naturalist," vol. 9, No. 3. Mr. Dawson has already won his spurs in the field of research, so well cultivated by his worthy father, Dr. Dawson, of Montreal, F.R.S.

take to stock-keeping and river service, but the great majority prefer the uncertain fruits of the chase and the net. The Indians of Queen Charlotte Islands have shown the most advanced culture in the arts and are the boldest sailors.

The policy of our Government as to Indian reserves is now administered by a crown commissioner. The grants are at about the rate of forty acres per family; but it is coolly laid down and as quietly acted upon, that here, in the land of their forefathers, the Indians have no right to any land beyond what may be necessary for their actual requirements, and all beyond this should be excluded from the boundaries of their reserves. This may be a practice quite in the interests of the whole human race, and in accordance with the original grant of the earth to man, who is trustee for his fellow-man, but it sounds hard and unpoetical at first hearing.

On the other side of this picture there is the unquestioned fact—first, that Christianity has, in various instances quite decisive, been successfully implanted in the mind of the Red Indian; that it has rendered him dignified, more thrifty and happy, and that it has been the means of forming communities of useful creditable citizens. Not to go back to the efforts of Eliot and others, we might adduce the successful cases chronicled within the United States territories; and, most remarkable of all, the signal instance of blessing which has crowned the labours of Mr. Duncan at Metlakatla; an experiment so purely Christian, and so wonderfully successful that it deserves more than a reference at the end of an article. Further, the witnesses are unanimous that there is no inherent bar in the mind of the Indian condemning him to an inferior position. He is capable of being raised out of a condition of barbarism or tutelage into a condition of civilisation, freedom, and true religion. He may, in the person of the population now springing into being, be educated, converted, saved, to bear his part with others in the great march of the future.

S. R. P.

NATURAL HISTORY ANECDOTES.

SHARKS.

IT is a very generally accepted idea that sharks are all of such a cruel and voracious nature as to render bathing where they are known to exist impossible. As to their cruelty or voracity I am not going to say anything—only about bathing in waters where they undoubtedly were in great numbers, I will give you an instance of its being persisted in for years without any recorded accident.

During the Persian campaign in 1855-6, the vessels stationed in the Gulf belonging to the Honourable East India Company's Navy were in the habit of piping all hands to bathe, morning and evening, at six bells, or seven o'clock in the morning, and four bells in the evening; and during the hot season very necessary the bath was, for there are few places that can compare with the Persian Gulf for heat. Lying at Bushire for some six or eight months, broken only by occasional short trips on service, the vessel to which I belonged, the *Zenobia*, ever afterwards continued the practice, and I have pretty constantly bathed at the same time. The men were allowed to remain in the water half an hour. After their even-

ing dip, when every one had clambered up the booms on to the decks, the various messes would bring up the mutton that remained from the day's allowance (which was half a sheep to twelve men, and provided by the country) to throw overboard, as it would not keep in such weather. Then the sharks came to the surface in numbers, in the very spot we had left; and I have more than once seen a young shark of a couple of feet in length, while struggling to carry off a joint for himself, swallowed whole, and his joint with him, by some monster of twelve, fourteen, or sixteen feet in length. I may mention, too, that the water there is always thick and yellow, and the average anchorage about seven fathoms.

E. D.

SAGACITY OR REASONING?

In Montreal the majority of the yards are boarded with deals, and under these the rats, which are very numerous in Canada, have generally a "fine time."

We had a Dinmont terrier, brought out by a friend, which very soon acquired a great reputation as a ratter and a slayer of cats. Many attempts were made to steal him, but without success; "Dandy" always found his way home.

One bright afternoon, while reading at the sitting-room window, my attention was drawn to a very large rat moving about the yard, and imagine my astonishment when I beheld Mr. Dandy laid straight out on the steps of the back porch, watching him too. Yes, there he was, eyes wide open, and his short tail straight up, just moving, looking right at the rat—no, stay! it was not *that* rat Dandy was looking at, it was another, that was half in, half out, of a hole, between him and the first rat which I had noticed. I had not long to wait to see the line of reasoning on which the dog's apparent apathy was founded, for the second rat having just drawn himself out, Dandy had him with a spring like lightning, killed him with one bite, and then *stuffed him against the hole*. Meanwhile the other rat ran round three sides of the yard, in vain endeavouring to find an outlet. As soon as Dandy left the hole he darted for it, to find his way barred by the body of his companion.

He was soon killed; and then Dandy, walking out demurely into the middle of the yard, looked "What do you think of that?" at me, with a very slight wag of his little tail.

He must have argued the point over in his own mind thus: "If I 'go' for the other one *this* one will escape, but if I wait for this one I shall have them both," and he acted upon this view.

E. D.

RED ANTS' SUSPENSION BRIDGE.

Every one who has resided in the tropics knows how very difficult it is to keep food of any kind from becoming full of the small red ants, who get into every thing edible and in such enormous numbers as to render the food useless. Many are the devices and plans adopted to secure immunity from these pests. I propose to tell you how these indefatigable little engineers rendered futile an attempt to banish them from my larder. I was determined they should be kept out, so having the meat-safe detached from the wall, I had a stand made for it, with four legs, each of which stood in a little tin vessel containing water; and when I saw everything completed and the cups full, I smiled the smile of conscious triumph. I did not know my enemies. Some eight or ten days after I had had these alterations made, alas! my

sugar was as full of them as ever, and my bread living. I had only one maty, or cook-boy, as a servant with me on this particular occasion, being out in the moffussil. So, calling him, "Peesoo," said I; "how is this after all our trouble?" Away went Peesoo after seeing the ants, and presently came back and said with a look of vexation, "Come and see, sir, come and see what a bridge they have made."

Up I got, and followed to what I had considered my impregnable safe. On reaching it I found proceeding along the whitewashed wall a string of ants going and coming from the outer door to a height of four feet on my wall, and corresponding with that of the safe, and looking between it and the wall, I discovered the secret—the bridge which these persevering little insects had made. It consisted of a broken bit of straw, which rested with one end on a mud buttress

fixed to the wall, and the other on the overhanging or projecting top of the safe, which came within an inch and a half of the wall. So they must have carried the straw up from the floor, and resting their end on the support they had prepared, let it fall until its end reached the safe, and then crossed and completed the structure, for it was fastened at both ends with the mortar composed of their saliva and fine earth. Ruthlessly I destroyed the bridge, and moving the safe farther from the wall, managed to prevent their inroads for that season at least. Since then I have frequently seen short bridges, composed entirely of the concrete or mortar which the white ants use to cover up their workings, extending from a damp earthen wall to anything not more than three-quarters of an inch from it.

E. D.



The Infinities.

I.

LIFT up your eyes to yon star-jewelled sky,
Gaze on that firmament caverned on high,—
Marvellous universe, infinite space,
Studded with suns in fixt order and place,
Each with its system of planets unseen,
Meshed in their orbits by comets between,
Worlds, that are vaster than mind may believe,
Whirling more swiftly than thought can conceive,
O ye immensities! Who shall declare
The glory of God in His galaxies there? *

II.

Look too on this poor planet of ours,
Torn by the storms of mysterious powers,
Evil contending with good from its birth,
Wrenching in battle the heartstrings of earth,—
Ah! what infinities circle us here,
Strangeness and wonderment swathing the sphere!
Providence ruleth with care most minute,
Yet is fell cruelty torturing the mute,
Infinite marvels of wrong and of right,
Blessing and banning each day and each night.

III.

All things in mystery; riddles unread;
Nothing but dimness of guesses instead;
Only beginning, where none see the end,
Nor where these infinite energies tend;

Saving that chrysalis-creatures are we,
Till we grow wings in that æon-to-be!
Everything infinite: Nature, and Art,
The schemes of man's mind, and the throbs of his heart;
Infinite cravings for better, and best,
Tempered by infinite longings for rest.

IV.

Then, as the telescope's miracle drew
Infinite Heaven's vast worlds into view,
So doth the microscope's marvel display
Infinite atomies, wondrous as they!
A mere drop of water, a bubble of air,
Teems with perfections of littleness there;
Infinite wisdom in exquisite works
All but invisible everywhere lurks,
While we confess as in great so in small,
Infinite skill in the Maker of all.

V.

And there be grander infinities still,
Where, in Emmanuel, good has quench'd ill;
Infinite humbleness, highest and first,
Choosing the doom of the lowest and worst;
Infinite pity, and patience,—how long?
Infinite justice, avenging all wrong,
Infinite purity, wisdom, and skill,
Bettering well through each effort of ill,
Infinite beauty and infinite love,
Shining around and beneath and above!

MARTIN F. TUPPER.

* *Æternus est et infinitus, omnipotens et omnisciens. Non est æternitas et infinitas, sed æternus et infinitus; non est duratio et spatium, sed durat et adest.*—Sir Isaac Newton.

Varieties.

NIAGARA DRY.—It is a fact that on March 31, 1848, the water of Niagara Falls almost ceased to flow, and persons crossed on the rocky ledge nearly from shore to shore. Dr. Fuller, of Ontario, recently mentioned this in a lecture, and the incredulity of most of the audience shows how soon an event so unusual can pass from remembrance. We should like to know if there are confirmatory reports from eye-witnesses. They must be on record in journals of the time, though the population of the region was then comparatively sparse. Dr. Fuller accounts for the phenomenon by the fact that a very strong wind prevailed on Lake Erie, the waters being also dammed up by floating ice.

WILL-MAKING CHEAPENED.—A Norfolk vicar calls attention to the cost and difficulty which people of small means incur in leaving property. He says,—I would make this a department of the Post Office (like the money order or savings bank) and entirely self-supporting. My proposal would be something of this kind. I would have all post-offices (of sufficient standing to have a savings bank department) authorised to issue at a low fee simple forms of wills, such as are now commonly sold by stationers. Say that there should be three forms—1, bequeathing all to one person absolutely for his own use and benefit, and he to be sole executor; 2, bequeathing all to one person, he to be sole executor, in trust for one or more persons being infirm people or minors; 3, bequeathing all between two or more persons (adults), they all being jointly executors. Such forms should be issued at about 1s. each; should, when witnessed by any two parish officers, be capable of being proved, at a small fee, at the nearest main post-office to the parish of which such officers belong, and delivered back after inquiries have been made by the postman on duty, with no more of formality than would enable the postmaster to ascertain by help of the postman the identity of legatee, trustee, and executor. I believe were some such machinery set up, many thousands of persons who now make no will would make a will; that many serious family difficulties would be avoided; and that the general surplus from the Post Office for the State would be increased. The revenue and the public would alike be gainers.

AMERICAN CITY POPULATION.—According to the recent census the following are the most populous towns in the United States, with their relative increase during ten years:—

		Increase per cent. since 1870.
New York	1,209,561	24
Philadelphia	842,000	24
Brooklyn	554,693	40
Chicago	477,500	60
St. Louis	375,000	21
Boston	352,000	40
Baltimore	330,000	23
Cincinnati	255,000	19
San Francisco	227,350	51
New Orleans	207,323	8
Washington	160,000	45
Cleveland	157,000	71
Buffalo	149,000	27
Newark	136,000	30
Milwaukee	136,000	92
Detroit	119,000	56
Louisville	112,000	11
Providence	104,000	52

Denver had the largest percentage of increase, being 6.14 per cent. Throughout the Union the town increase is greater than in the country.

PUBLIC-HOUSES IN RELATION TO CRIME AND HEALTH.—A noteworthy experiment as to the effect of Sir Wilfrid Lawson's Local Option principle is now being made in Liverpool. This city has been termed the experimenting ground for the licensing system, and we are told that an ounce of experience is worth a ton of theory. Liverpool has had more than enough of the free-trade experiment, and now an experiment in prohibition is being tried there on a pretty extensive scale. Lord Sefton and Mr. John Roberts, M.P. for Flint Boroughs, have agreed to prohibit the sale of liquor in any shape on land laid out for building purposes by them in the south of Liverpool. For some years

past new streets have been springing up over this area, and it is estimated that when the whole ground is covered there will be some 50,000 persons living in a district where not a drop of liquor can be sold or bought. What are the results so far? Mr. Roberts declares that he has never had a word of complaint from owners or occupiers of houses in the district on account of the absence of liquor-shops. Mr. S. G. Rathbone, the respected chairman of the School Board, has publicly called attention to the fact that the working classes are rapidly migrating from the districts where public-houses are thick on the ground to this prohibitory district. The head constable reports that his officers have very little to do on this ground where there are no public-houses. The medical officer reports that the death-rate is exceptionally low in the district. The feeling of the inhabitants in this district towards prohibition may be gathered from the fact that when, the other day, application was made to the licensing magistrates for an out-door licence for a house on the borders of the ground prohibited, the court was crowded with residents around, who opposed the application, and it was refused by the Bench accordingly. These facts are communicated to the "Times" by Mr. E. Jones, a resident in Amberley Street, within the prohibited area.

WINDFALLS.—Mr. Preston, the author of "Unclaimed Money," writing to a metropolitan contemporary for the information of lovers of the curious, points out the following remarkable windfall cases of recent date:—£500,000 to Sir Henry Havelock from his cousin, in consideration of Sir Henry (among other things) adding the name of "Allen" to his surname. £60,000 to be equally divided between the Life-Boat Institution and the Royal Free Hospital, from an old miser who for many years lived in a state of utter misery at Hounslow. £65,000 to the British Museum. This windfall was bequeathed by a barrister in 1823, subject to his widow's life interest therein. The lady survived her husband 57 years. £8,000 to executors by reason of the illegitimacy of an old lady of Brighton, she having given no directions as to the disposal of the residue of her estate, and there being no next of kin to claim the same. 100,000 dols. to a policeman at Woolwich in consequence of the death of a relative in America. 150,000fr. to the poor of Paris, owing to a lottery prize-winner failing to come forward.

GOLD IN DENTISTRY.—Dr. Farrar, an American physician, has made a very curious calculation. He estimates that not less than half a ton of pure gold, worth half a million of dollars, is annually packed into people's teeth in the United States. At this rate, all the gold in circulation will be buried in the earth in 300 years. He also calculates that three millions of artificial teeth are annually supplied and that only one person in eight have sound teeth.

A DOG FASTING.—Mr. W. Brankston Richardson writes to the *Christian Times*, from 61, Sutherland Gardens, Maida Vale:—"Concurrently with the forty days' fast of the misguided American doctor, another fast has been in progress in our own country, for the truth of which I myself can vouch. A friend of mine who lives in Devonshire left home some weeks since on a series of visits to his friends in distant parts of the country. A few days after he left, his servants wrote him that a favourite Skye terrier was missing. My friend, after every search had proved fruitless, considered that the dog had been stolen. On his return home, after an absence of one month and five days, he unlocked the library, the doors and windows of which had been bolted and barred during his absence, and to his astonishment the missing dog crept out into the light, a living skeleton and totally blind. He was well cared for, and has now quite recovered his health and sight. But his existence was wonderful. He had had no food, and no water, and had not gnawed the books or obtained sustenance from any source whatever."

DIRTY MONEY.—It was an expressive eulogium which the celebrated John Randolph passed on a citizen of Virginia: "Without shining abilities, or the advantages of an education, by plain straightforward industry under the guidance of old-fashioned honesty and good sense, he accumulated an ample fortune, in which it is firmly believed there was not one dirty shilling." Of how many "moneyed men could" this be said?